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ABSTRACT

A questionnaire was developed and tested in 1980-81 to determine any differences between University of Saskatchewan students who were required to discontinue their studies and students who successfully completed their first year. A list of factors considered to contribute to student failure was developed, and the format involved a personalized statement followed by a request to the student to indicate whether the statement had represented a major problem, a minor problem, or not a problem to them personally. In all, 1,171 student completed the questionnaire, and this number represented 80 percent of first-year students. The most frequently cited problem by students in every college early in their first year was the much heavier workload compared with grade 12. For the most part, students who were required to discontinue showed remarkable self-criticism in their responses; they recognized inadequacies in organizing their workload, in keeping up with assignments and in self-motivation, but were not inclined to criticize counseling to any great degree. There were no significant differences between student survivors and casualties for age or year of matriculation. Items most frequently cited as problems early in the first academic year and items most frequently cited as problems in mid-March are identified, along with items least frequently cited as problems at both testing times, and items that discriminated between survivors and casualties. Comparisons among colleges are also reported. (SW)

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FIRST YEAR UNIVERSITY STUDENT SURVEY

1981

JULY 1981

John McLeod

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1. Goals of the survey

The immediate goal of the survey was to assess the validity of items in a questionnaire, according to their power to discriminate between students who were required to discontinue their studies and students who successfully completed their first year.

It was not possible to begin analysis of data until information was available (in mid-June) as to which students had been required to discontinue. In view of the time constraint (it is hoped that the results of the analysis might be of value in orienting students about to commence university studies in September 1981) the present report will confine itself for the most part to the single goal originally laid down. However, as the analysis has proceeded, it has been clear that much more information can be extracted from the data already available, and it is intended to proceed with this during the 1981-82 academic year.

2. Background to the survey

In May, 1980, a one-day seminar was convened at the University of Saskatchewan to discuss the problem of first year student failure rates. The seminar was attended by members of the University Administration, faculty, students, the University student counselling service. Representatives also attended from the provincial departments of Education and Continuing Education, from the Saskatchewan Schools Trustees Association and the Saskatchewan Teachers Federation. A modified brainstorming session comprised one part of the day's proceedings, as a result of which a list of factors considered to contribute to student failure was developed. These factors were consolidated into 91 statements which comprised the basis of the survey questionnaire.

Following a preliminary tryout of a sample of items, with a group of second year Education students, it was decided to use a format in which a personalized statement was followed by a request to the student to indicate whether the statement had represented a major problem, a minor problem or no problem to them personally, either at the time of the survey (mid-March) or early in the academic year.

3. Survey procedure

In order to survey as many first year students as possible, without unnecessarily complicated arrangements or duplication, the co-operation of the English Department was solicited, and received (for which grateful acknowledgement is made). As a result, the survey questionnaire was presented during one session of each section of English 102 during the week commencing March 16, 1981. Because Agriculture and Engineering

students do not take English 102, separate arrangements were made for these Colleges, through the ready, and appreciated, co-operation of their respective Deans. Unfortunately, it was not realised that the College of Commerce also do not take English 102, so that no survey was made of students in that College.

In all, 1,171 students completed the questionnaire. According to class lists provided by the Registrar, 1,679 were still on the rolls of the classes to whom the questionnaires were presented, the completed questionnaires thus representing 70 per cent of enrolled students. If average class attendance in mid-March was around 90 per cent, the completed questionnaires reflect a return of nearer 80 per cent of students who were actually present. Students had been assured that they were not obliged to answer the questionnaire, so the response must be regarded as excellent and encourages confidence in the validity of the data obtained.

After students completed the questionnaire in March 1981, further activity had to wait until first year student performances had been evaluated (mid-June) and decisions had been arrived at as to which students would be required to discontinue studies in 1981-82. Thanks to prompt and excellent co-operation of the Registrar's office, and particularly that of Mr. Schick, computer printouts were received for every student who had responded to the questionnaire. The data for each student included College, sex, date of birth, year of matriculation, matriculation average mark and status (i.e. "required to discontinue" or satisfactory completion of first year studies). It transpired that 56 students from Arts and Science, 20 from Engineering, 15 from Agriculture and 10 from Education, Home Economics and Nursing had been required to discontinue.

In order to evaluate the significance or otherwise of each failing student's questionnaire responses, a control group was selected. The control group was made up from students selected at random, but matched, student for student, according to (a) College, (b) sex, (c) English 102 (or corresponding Agriculture and Engineering classes) section. In the few cases where matching on all three variables was not possible, the control student was selected from an adjacent numbered section; in one case it was not possible to match the student with a control of the same sex. Data for each student were entered into computer file for analysis.

4. Results

Data were tablulated for each College separately (see Appendix A), except that Education, Home Economics and Nursing were pooled in view of the small number of students from these Colleges who were required to discontinue. As well as the analysis of each questionnaire item, data summarized include:

a) Sex
b) Age
c) Year of Matriculation
d) Distribution of matriculation marks, and
e) Matriculation average.

In the first column of Appendix A are set out summarised data in respect of the "survivors", i.e. students who were deemed to have successfully completed first year; the second column contains data for the "casualties", i.e. those students who were required to discontinue.

Under the heading "Questionnaire responses", there are three sub-columns both for survivors and casualties. In each case, the first sub-column records the number of "No problem" responses, the second sub-column the number of "Minor problem" responses and the third sub-column records the number of "Major problem" responses.

5. Analysis of results

As indicated earlier, the goal of this preliminary analysis was to analyse the validity of items in the survey questionnaire, no statistical analysis of the other data was therefore incorporated into the computer program. However, a quick check confirmed that there were no significant differences between survivors and casualties for age or year of matriculation. However, it did not require an analysis of variance to demonstrate a highly significant difference between the mean matriculation marks of survivors and casualties. The histogram printouts included in Appendix A illustrate clearly the difference in the matriculation marks of the two groups, and the degree of overlap between them. (It should be remembered that the "survivors" group consists of a roughly one-in-nine sampling of the total.)

Each questionnaire item was analysed for its power to discriminate between the survivor group and the casualty group for each College, both as a problem encountered early in the academic year and as a problem as perceived toward the end of the academic year. Chi-square was employed for a 2x3 matrix in the case of the College of Arts and Science. Because of small expected cell frequencies, "Minor problems" and "Major problems" were collapsed into a single category for Engineering and Agriculture, while it was not deemed appropriate to apply chi-square to responses of the group made up of Education, Home Economics and Nursing. However, data from these Colleges along with data from the three other Colleges were included in an overall analysis of aggregated data.

As well as computing the discriminatory power of each item, the number of times that each item was identified as a problem by casualties and survivors was also noted.

a) Aggregated data

It is possible to cross-classify responses according to frequency and discriminatory power, as illustrated in Figure 1. Cell A represents items perceived by all students as problems, but items that are not perceived disproportionately as such by failing students. In other words, common problems associated with university life. Cell B represents items that describe problems frequently cited by students, and especially by failing

students. It may be argued that such items refer to problems that require to be tackled as a matter of some urgency.

	Identified as a problem by all students	
	Frequently	Rarely
Identified similarly by survivors and casualties	A	C
Identified significantly more often by casualties	B	D

Figure 1.

Cell C represents items that are mentioned infrequently and, when they are cited, are mentioned as often by succeeding students as they are by failing students. In other words, the "problems" they refer to are relatively insignificant, or even mythical. Cell D refers to items that are not frequently referred to as problems but which do discriminate between survivors and casualties. They might well be regarded as referring to situations which need to be looked at in individual cases.

In Table 1, the ten items most frequently identified as problems are listed; those which discriminate significantly between survivors and casualties are followed by the letter (B), the non-discriminators by (A), to correspond with Figure 1.

TABLE 1

(a) Items most frequently cited as problems early in the first academic year

Workload was much heavier at University than it had been at High School.	(B)
It was difficult to motivate myself to study.	(B)
I didn't really know how to organise my work and study effectively.	(B)
I didn't manage my time effectively.	(B)
University marks are much lower than High School marks.	(B)
There is a difference in academic standards between High School and University.	(B)
I didn't know how to study.	(B)
The program of study imposed heavy demands.	(B)
Examinations created stress.	(A)
Some professors were poor teachers.	(A)

TABLE 1 (cont'd)

(b) Items most frequently cited as problems in mid-March

Examinations created stress	(B)
Workload was much heavier at University than it has been at High School.	(B)
University marks are much lower than High School marks.	(B)
I didn't manage my time effectively.	(B)
The program of study imposed heavy demands.	(B)
I let my studies slide, always thinking I could catch up.	(B)
I didn't know how to study.	(B)
It was difficult to motivate myself to study.	(A)
Some professors were poor teachers.	(A)
I didn't really know how to organise my work and study schedule effectively.	(A)

A phenomenon that was common throughout all groups was a marked reduction in the number of items described as "severe problems" in mid-March, compared with perceptions early in the academic year. The "top ten" problems were identified "severe" on average by 45.2% of students early in the academic year, but this incidence had reduced to 29.6% by mid-March. Many students apparently overcome their most acute problems to some extent, or at least learn to live with them.

Table 2 summarises the items which were least frequently cited as problems. Again, items are sub-classified according to whether they discriminated significantly between survivors and casualties (D) or failed to discriminate (C). The average number of citations as "severe problems" decreased from 22% early in the academic year to 17.25% in mid-March.

TABLE 2

(a) Items least frequently cited as problems early in the first academic year

I was allowed to register for classes/programs for which my Grade 12 record did not really qualify me.	(D)
I picked the wrong subjects/program in first year Universtiy.	(D)
My parents pressured me to come to University.	(D)
My general health was not good.	(C)
University entrance requirements were too low.	(C)
University entrance requirements were not appropriate for the classes I took.	(C)
It was difficult adjusting to life in a large city.	(C)
There was a need to adjust from rural to city life.	(C)
I neglected proper eating habits.	(C)
It was necessary to adjust from being a "big wheel" at High School, to an "unknown spoke" at University.	(C)

TABLE 2 (cont'd)

(b) Items least frequently cited as problems in mid-March

My general health was not good.	(C)
University entrance requirements were too low.	(C)
I was allowed to register for classes/programs that my Grade 12 record did not really qualify me.	(C)
There was a need to adjust from rural to city life.	(C)
It was difficult adjusting to life in a large city.	(C)
Other students weren't very helpful.	(C)
There was incorrect advice as to which first year subjects/program I should take at University	(C)
I was unwilling to seek help from fellow students.	(C)
I neglected proper eating habits.	(C)
University entrance requirements were not appropriate for the classes I took.	(C)

Discriminatory power of items for the total sample

Table 3 lists the items which discriminated significantly between the survivor sample and casualties sample responses. Those items in List A are those which discriminated with a probability value of less than 0.1%; List B contains items which discriminated at the 1% level of significance and List C those which discriminated at the 2% level of statistical significance.

TABLE 3

(a) Items which discriminated between survivors and casualties early in the academic year

List A

I didn't really know how to organise my work and study schedule effectively.
I didn't know how to study.
I had assumed (wrongly) that first year classes would go over some of the Grade 12 work that I had not fully understood.
University marks are much lower than High School marks.
There was greatly increased personal freedom, which I wasn't accustomed to.
I planned my assignments poorly.
I had the wrong idea of what a University is all about.
I didn't manage my time effectively.
Teaching styles at University were different from those I had known at High School.
No one ever really taught me how to organise my study habits.
Too much time was spent on partying, watching TV, etc.
I let my studies slide, always thinking I could catch up.
I didn't persevere when things got difficult.
I was not firmly committed to my studies.

TABLE 3 (cont'd)

(a) Items which discriminated between survivors and casualties early in the academic year

List B

I wasn't organised personally.
It was difficult adjusting to the University compared with High School as an educational environment.
I have some difficulty with arithmetic skills.
The program of study imposed heavy demands.
My parents pressured me to come to University.
I found I had some learning difficulties that I had not realized before.
I have some difficulty comprehending what I read.
There wasn't continuity between Grade 12 curriculum and first year University.
Good marks had been achieved fairly easily at High School, which probably helped to establish study habits which just weren't adequate for University work.
It was difficult to talk with some of the lecturers because of their accent.
It was difficult to motivate myself to study.
I picked the wrong subjects/program in first year University.

List C

Examination techniques are different from those at High School.
There is a difference in academic standards between High School and University.
I couldn't understand the accent of some of the lecturers.
The marks I got for the first assignments and exams at University were so much lower than I had been accustomed to at school that they demoralized me.
Workload was much heavier at University than it had been at High School.

(b) Items which discriminated between survivors and casualties in mid-March

List A

I didn't know how to study.
Examination techniques are different from those at High School.
University marks are much lower than High School marks.
I have some difficulty with arithmetic skills.
I had the wrong idea of what a University is all about.
There is a difference in academic standards between High School and University.
Teaching styles at University were different from those I had known at High School.
I have some difficulty comprehending what I read.
The marks I got for the first assignments and exams at University were so much lower than I had been accustomed to at school that they demoralized me.

TABLE 3 (cont'd)

(b) Items which discriminated between survivors and casualties in mid-March

List A (cont'd)

I let my studies slide, always thinking I could catch up.
I didn't persevere when things got difficult.
I was not firmly committed to my studies.

List B

I did not really have a clear idea about the nature and purpose of a University.
I had assumed (wrongly) that first year classes would go over some of the Grade 12 work that I had not fully understood.
The program of study imposed heavy demands.
I planned my assignments poorly.
My High School marks were maybe a bit overgenerous, which gave me the wrong impression that I would be able to make it at University.
I didn't manage my time effectively.
There wasn't continuity between Grade 12 curriculum and first year University.
No one had ever really taught me how to organize my study habits.
Good marks had been achieved fairly easily at High School, which probably helped to establish study habits which just weren't adequate for University work.
Workload was much heavier at University than it had been at High School.
I had problems expressing myself in written work.

List C

There was greatly increased personal freedom, which I wasn't accustomed to.
I couldn't understand the accent of some of the professors or lecturers.
Examinations created stress.
I had not received adequate counselling on how to study effectively.

(b) College by College

As indicated earlier, the number of students required to discontinue in Education, Home Economics and Nursing was too small for meaningful statistical analysis to be made. In the case of the other three Colleges, however, separate item discriminations were carried out in the same way as for the aggregated responses. Complete results of these analyses are available on request, but the results are summarized in a way which facilitates inter-College comparison, in Table 4. Table 4 depicts those questionnaire items which discriminated at the 2% level of statistical significance, or better, according to chi-square.

TABLE 4

Questionnaire items which significantly (2%) discriminated between survivors and casualties in individual Colleges

Item #	Arts and Science		Agriculture		Engineering	
	Early	Mid-March	Early	Mid-March	Early	Mid-March
1	+					
3*	+					
7					+	
9	+					
12					+	+
13					+	+
16					+	+
20					+	
23						+
27		+		+	+	+
29					+	+
31	+					
32					+	
33					+	+
34			+			
36	+				+	
37	+				+	+
40					+	+
42					+	+
44						+
50	+				+	
51	+	+			+	+
54		+				
57			+			+
62	+					
65					+	+
67			+	+	+	+
70		+			+	
71					+	+
72						+
77		+				
78					+	
79						+
83		+				
84	+	+				
85				+		
86	+				+	+
88					+	+
89					+	
91	+	+			+	+

*Recognized significantly more as a problem by survivors

It should be remembered that the College of Arts and Science accounts for approximately a half of the total number of students required to discontinue, so that some similarity is inevitable between the list of items which discriminates for the total sample and those which discriminate for Arts and Science.

The one item which discriminated between survivors and casualties for all three Colleges separately, is #27, i.e. recognition that University marks are much lower than High School marks. There was greatest communality between discriminating items for the Colleges of Engineering and Arts and Science, most of the seven shared items relating to what might generally be regarded as self-critical observations by students. Item #57 ("In difficult situations, I did not know what options were open to me") and #67 (There wasn't continuity between Grade 12 curriculum and first year University") were the two discriminating items which were common to the Colleges of Agriculture and Engineering, (but not Arts and Science), and probably reflect the more specific characteristics of programs in those two Colleges. There were no shared discriminating items for Agriculture and Arts and Science.

6. Discussion of results

As perceived from the perspective of mid-March, the most frequently cited problem by students in every College early in their first year University year was the much heavier workload at University compared with Grade 12, (#79). Increased workload was still seen as a problem by many students by mid-March, but by then it had lost its undisputed place as the number one problem.

For the most part, students destined to be required to discontinue showed remarkable self-criticism in their responses; they recognised inadequacies in organising their workload, in keeping up with assignments and in self-motivation, but were not inclined to criticise counselling to any great degree. Many students were critical of the teaching of some University professors, but the casualties were not (apart from Agriculture students in March) disproportionately critical.

Students from all Colleges recognised the difference in marking standards between High School and University as a problem, but relatively few considered that their Grade 12 marks had been misleadingly high,(Item #3). Indeed, in the case of Arts and Science, a significantly higher proportion of survivors considered their high Grade 12 marks to have been a problem than did the subsequent casualties. In view of the great difference in Grade 12 marks for the two groups, it is possible that the generally intra-punitive responses of the casualties were to some extent a reflection of defensiveness of their own academic ability.

As well as examining items which were checked frequently, or which discriminated between survivors and casualties, regard should also be paid

to items which were infrequently checked and which did not significantly discriminate. Whilst it would be rash to conclude that such data dispel commonly-held myths, they do at any rate suggest that factors such as the alleged impersonality of large classes, indifference on the part of professors, assembly-line counselling, or transition from rural to city life might have been somewhat overdrawn. (The rural-urban transition needs to be further examined, as the ex-rural students might have been swamped by the preponderance of seasoned city dwellers. Even so, this would mean that the actual number of rural casualties is relatively small.)

7. Conclusions

It must be stressed at the outset that the data represents a survey of the perceptions of first year students. These perceptions might not always be accurate and in some cases, especially with failing students, they are doubtless affected to some degree by ego-defence. Nevertheless, what a student--especially a failing student--perceives as a problem is itself a very real piece of data concerning a situation which is affecting her/him personally.

The response of students to the survey is most gratifying and enables us to have confidence that the information gathered represents a valid reflection of first year student reaction to the questions asked, and not simply the reactions of a biassed sample. If the "first-hand" information is passed on to future first-year students so that they are at least alerted to some of the potential problems to be faced in their transition to University, it is hoped that they will realise that the information would not have been available without the excellent co-operation of their 1980-81 predecessors.It is further hoped that they themselves will be as co-operative in any future endeavour to improve our understanding (and reduction) of first year University failure.

This report constitutes only a preliminary analysis of some of the data acquired and some of the present "conclusions" would be more appropriately described as ideas for futher data analysis and for possible preventive action. As such, they will be dealt with in a separate section.

The one true conclusion that can be drawn at this stage is that a number of factors have been identified which are perceived as problems by many students (Table 1), and there are several factors which pose a far more serious problem for students who do not survive first year studies (Tables 3 and 4). These factors should be drawn to the attention of Fresher students who should be advised, especially those with lower Matriculation averages (below/about 78 in the case of Engineering, 70 in the case of the other Colleges surveyed), to seek out help during first term if they find they are experiencing problems in the areas identified.

8. Implications for further study

(a) Further analysis of data available

[i] First year University classes should be subjected to the same sort of analysis as were the questionnaire items. That is, the question should be asked as to whether certain classes occur with disproportionate frequency in the programs of casualties in comparison with those of survivors? (Cursory examination suggests, for instance, that several casualties with relatively high Matriculation averages fail in Math 174 or Math 175, while students of much more modest ability survive with Math 102 in their program.)

[ii] An "at risk" score might be derived according to the number of discriminating items checked as problems by students. The administration of an effective questionnaire (shortened as a result of the 1981 item analysis) could lead to preventive action (see #i in the following section).

(b) Possible future action

[i] If a modified questionnaire is administered to all first year students approximately midway through first term, it should be possible to:

(a) develop a progressively refined and valid instrument;

(b) counsel individual students with a view to preventing first year failure.

[ii] Examination of current practices regarding first year failing students:

(a) anecdotal examination of the academic records of students prompted some questions as to whether current practice is always equitable. For example, one or two students who had withdrawn from several classes, ended up with maybe only a couple of classes with marks in the 50s--and survived. Others, with a heavy load, achieved one or two 60s--even a 70 in one case--but were required to discontinue because of overall poor performance.

(b) At least on an experimental basis, it might be beneficial for students' self-respect, for the more efficient use of intellectual potential--and not least for the finances of

the University—to allow a selected group of students to return in 1982-83 who would normally be required to discontinue at the end of the 1981-82 academic year. The condition would be, in essence, that they would receive counselling (and possibly some academic remediation) before and during their return. As a longer term evaluation of such a procedure, if adopted, the 1981-82 "Required to discontinue" group might be divided into two groups, one to discontinue as in the past and the other to be rehabilitated, their respective academic records to be compared (say) five years down the line. In view of inter-college variation, it might be advisable to confine any such experiment to the College of Arts and Science in the first instance.

(c) The lack of continuity perceived by many first year Engineering and Agriculture students could be partly a result of the fact that both Engineering and Agriculture represent "new" subjects to those that have been taken in High School. It might be worth these Colleges' considering the development, or acquisition,of aptitude tests for prospective students.

(d) The present survey was concerned only with the diagnosis between survivors and failures among students who were still attending classes in March 1981. It takes no account of students who had voluntarily withdrawn before March (although it cannot be assumed that all of these students would have failed the year). It would be informative to have the questionnaire (or a modification thereof) administered to such students, perhaps as part of their withdrawal procedure.

9. Acknowledgements

Responsibility for the selection and wording of items, for the analytic procedures, the interpretation of results and conclusions drawn is that of the author alone. It follows that any inaccuracies are also his responsibility. However, acknowledgement of, and appreciation for, help of various kinds has to made to a number of people. First, to all the participants of that excellent seminar which brainstormed the essence of the survey items, and especially to Jim Spooner and his assistants who were primarily responsible for organising the session; also, to Dr. C.K. Leong and Sharon Van Cleave,

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